

**THIN FILM COATING OF A SLOTTED SUBSTRATE
AND TECHNIQUES FOR FORMING SLOTTED SUBSTRATES**

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ABSTRACT

A coated substrate for a center feed printhead has a substrate, a thin film applied over the substrate, and a slot region extending through the substrate and the thin film. A slot is formed through the slot region of the coated substrate. The thin film layer coating minimizes crack formation and/or a chip count in a shelf surrounding the slot through the substrate. In one embodiment, the slot is formed mechanically. In one embodiment, a plurality of thin films is used. The slot region extends through the plurality of thin films. Any combination of thin films may be applied over the substrate.

In one embodiment, the thin film is at least one of a metal film, a polymer film, and a dielectric film. In another embodiment, the thin film material is ductile and/or deposited under compression. In one embodiment, the substrate is silicon, and the thin film is an insulating layer grown from the substrate, such as field oxide. In one embodiment, the thin film is PSG. In one embodiment, the thin film is a passivation layer, such as at least one of silicon nitride and silicon carbide. In one embodiment, the thin film is a cavitation barrier layer, such as tantalum.